U.S. Fish and Wildlife Service
Office of Subsistence Management
Fisheries Resource Monitoring Program

From Neqa to Tepa: A Database with Traditional Knowledge about the Fish of Bristol Bay

Final Report No. FIS00-012

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May 2002

FINAL REPORT SUMMARY

Title: From Neqa to Tepa: A Database with Traditional Knowledge about the Fish of Bristol Bay

Study Number: FIS00-012

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Geographic Area: Bristol Bay

Information Type: Traditional Ecological Knowledge (TEK)

Issue Addressed: Capacity building for factoring traditional knowledge into fisheries management

Total Cost: $39,600

Project Duration: **7**/1/00 to 12/31/01

Abstract: *From Neqa to Tepa: A Database with Traditional Knowledge about the Fish of Bristol Bay* is a product of this project. It is a computer-searchable database produced using the askSam program and distributed on CDs. The database consists of TEK and other information concerning fisheries, collected by researchers at the Division of Subsistence, ADF&G. Notes from the following communities on the west side of Bristol Bay were put into the database: Levelock, Manokotak, Togiak, and Twin Hills. Some information from other western Bristol Bay communities, such as, Aleknagik, Clarks Point, Ekwok, Koliganek, and New Stuyahok, was also included. Information from residents of other Bristol Bay communities was identified and quantified, and geographical and topical areas were identified where more research is needed. Recommendations for future research are included.

Key Words: Bristol Bay, salmon, herring, smelt, Dolly Varden, whitefish, Arctic grayling, lake trout, rainbow trout, northern pike, blackfish, burbot, longnose suckers, traditional ecological knowledge, local knowledge, Yup'ik Eskimo, Dena'ina Athabaskan, Alutiiq, subsistence uses

Project Data: ADF&G computer network master directory, organized by researcher and community. This is a directory of research notes on file at the Division of Subsistence.

Citation: Kenner, Philippa Coiley. 2001. From Neqa to Tepa: A Database with Traditional Knowledge about the Fish of Bristol Bay Compact Disk Version 1.0. USFWS Office of Subsistence Management, Fisheries Resource Monitoring Program, Final Report No. FIS00-012, Anchorage, Alaska.

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EXECUTIVE SUMMARY

From Neqa to Tepa: A Database with Traditional Knowledge about the Fish of Bristol Bay[1] is a product of this project. It is a computer-searchable database produced using the askSam program and distributed on CDs. The database consists of traditional ecological knowledge and other information concerning fisheries collected by researchers at the Division of Subsistence, ADF&G, and identified during this project. Notes from the following communities on the west side of Bristol Bay were put into the database: Levelock, Manokotak, Togiak, and Twin Hills. Some information from other western Bristol Bay communities, such as, Aleknagik, Clarks Point, Ekwok, Koliganek, and New Stuyahok, was also included. *From Neqa to Tepa* is constituted mainly from information collected by Division of Subsistence researchers which was organized in a master directory on the Alaska Department of Fish and Game network.

All 1,427 entries in the database are keyworded. Specific keywords are placed in "Fields" and multiple fields can be searched at the same time. Therefore, there are hundreds of thousands of possible searches that can be viewed, saved, and printed. Division technical papers and other reports concerning western Bristol Bay are linked to the database, and a map of the entire Bristol Bay area is also available to view on the database. The database was put on a CD, and instructions on how to use the database from a computer are on the inside cover.

Traditional knowledge about the fisheries of some communities is extensive, including Togiak, Twin Hills, Manokotak, and Levelock. While some subjects, such as, traditional taxonomy and seasonality, are covered more than others, the database contains many entries for these communities as a whole. Communities along the Nushagak drainage are represented fairly well in the database, especially Ekwok, New Stuyahok, and Koliganek. Currently, there is more detailed information concerning use areas and methods, especially for the species that are abundant and used the most, such as whitefish, then for other species or topics. There is less ecological information than there is for communities such as Togiak, Manokotak, and Levelock, and fewer notes in total. This is true for Dillingham, Clarks Point, and Aleknagik, especially. The database includes some notes from Iliamna Lake region, and no notes for the Alaska Peninsula.

The database entries are strongest in their descriptions of the non-commercial harvest and use of fish, and specifically in the trade and distribution of fish, or sharing. Also common are notes describing specific harvest sites, method of harvest, and to a lesser degree the preservation and preparation of fish. These notes are found using the "sociological keywords". In general the more notes there are regarding a species, the more likely it is that there is also ecological information, such as, descriptions of fish in western and traditional taxonomies, seasonal movement, and population trends. These notes are found using "ecological keywords". In general, species with 15 notes or less (or "hits" in database lingo) for a particular community probably have one or two in-depth descriptions of the species. If a species has more than 20 hits,

[1] **From Neqa to Tepa** (in the Yup'ik language, the generic name for "fish", neqa, to the making of "aging fish heads", tepa) combines the knowledge of harvesting wild fish, neqa, and its production into a local delicacy, tepa. The importance of both the wild fish and the knowledge of fish by the local people are connected in this phrase.

it is likely that there are at least general notes covering the use and harvest and probably the ecology of a species. Not all notes could be included in the database. The reason for non-inclusion is lack of time and the desire to create a database structure for review and testing.

Some salmon notes exist for every community in the database. This is in part due to the almost universal harvest and use of salmon by residents in the Bristol Bay region. Other species that are used much less universally have fewer notes as there are fewer people with knowledge of these species, such as blackfish and burbot.

If future research of fisheries in Bristol Bay becomes possible, several priorities should be evaluated: 1. Non-salmon species should be given as much consideration as salmon. 2. Communities that rely the most on fish and for which use areas are in the most conflict with other users, such as non-local sport fishers and commercial fishers, should be priorities for research. The knowledge aids managers as well as users. 3. Information from people of the northern Alaska Peninsula should be interviewed and traditional ecological knowledge collected concerning fisheries, and this research has been started.

INTRODUCTION

Background

The Division of Subsistence of the Alaska Department of Fish and Game (ADF&G) has conducted an active research program in the Bristol Bay area of southwest Alaska for 20 years. Baseline harvest data for the wide range of subsistence resources used in the region are available for almost all the area's communities. Technical papers have been published which describe contemporary subsistence patterns in Bristol Bay, based upon a variety of research methods, including systematic surveys and key respondent interviewing.

Since 1986, the Division has conducted research focusing on collecting traditional ecological knowledge (TEK) of freshwater fish in the Bristol Bay area, including traditional taxonomies, trends in abundance, condition of fish stocks, movement, timing of runs, areas of harvest, timing of harvests, means of harvests, food types, preservation methods, sharing, and customary trade. Information on resident freshwater fish species has been provided by local fishing experts from Aleknagik, Clarks Point, Dillingham, Ekwok, Koliganek, Levelock, Manokotak, New Stuyahok, Pedro Bay, Togiak, and Twin Hills. While two reports have summarized subsistence use patterns (*An Overview of the Harvest and Use of Freshwater Fish by the Communities of the Bristol Bay Region, Southwest Alaska*, by James Fall, Molly Chythlook, Janet Schichnes, and Judith Morris, Technical Paper No. 166, Division of Subsistence ADF&G, 1996, 169 pp.; and The Harvest and Use of Freshwater Fish in Togiak and Manokotak, 1994-95, Bristol Bay Native Association and the Division of Subsistence, ADF&G, for the USFWS, Dillingham, 1996, 101 pp.), most of the traditional knowledge on freshwater fisheries provided by local fishing experts remains in hand-written interviews and typed MS Word files, trip reports, and audio tapes.

The Division has also conducted research on traditional knowledge regarding salmon in the Bristol Bay area (e.g., Kenner et al. 1999). As with non-salmon fish, much of the information on salmon has not been published or organized. In the Chignik area (part of the region serviced by the Bristol Bay Native Association [BBNA]), directed research took place on salmon and other subsistence fisheries (ADF&G 2002, Hutchinson-Scarbrough and Fall 1996). Recent research has been conducted in Perryville on traditional knowledge of salmon stocks (Hutchinson-Scarbrough and Fall 1999).

OBJECTIVES

1. The identification of existing TEK information in Division field notes, trip reports, audio tapes, and technical papers;
2. The conversion of existing TEK information into a useable computer-searchable database;
3. Training of BBNA staff in use of the database; and

4. An assessment of the current coverage of the information by species, geographic area, and topic, included in a written final report along with technical documentation for the database.

METHODS

All Division of Subsistence field notes, trip reports, technical papers, audio tapes, and other records in the Dillingham office, including files in storage from the former Division office in King Salmon, as well as records in storage in Anchorage, were reviewed for information regarding traditional knowledge of fish, including salmon, other anadromous fish (smelt, sea-run Dolly Varden, steelhead), marine fish (most notably herring), and resident species. Information was entered into a computerized, searchable database. The computerized database is searchable using the askSam program, which is the standard software used by the Division of Subsistence for qualitative narrative text databases. In this system, all words are searchable. However, staff also keyworded entries by general keyword scheme.

Because a complete inventory of the extent of the Division's TEK information had never been done, the amount of time required to work through this material was uncertain, and priorities for entering information into the database were set by subregion and community, as follows.

1. Levelock, Aleknagik, Manokotak, Togiak, and Twin Hills. These are the communities in which most of the focused research on freshwater fish had been accomplished.

2. Other western Bristol Bay communities, including Ekwok, Portage Creek, New Stuyahok, Koliganek, Dillingham, and Clarks Point. These communities have all been the focus of baseline research and key respondent interviewing.

3. Iliamna Lake subregion. Recent research was conducted in Pedro Bay (Kenner et al. 1999). Older information appeared sparingly in some technical papers or is archived. The extent of traditional and local knowledge information collected about fish in earlier studies was unknown.

4. Western Alaska Peninsula, including Naknek, King Salmon, South Naknek, Egegik, Pilot Point, Ugashik, and Port Heiden. The extent of traditional and local information collected about fish in early studies was unknown.

5. The Chignik Area, including Chignik, Chignik Lagoon, Chignik Lake, Ivanof Bay, and Perryville. Research in this area regarding fish has focused on salmon (e.g. ADF&G 2002, Hutchinson-Scarbrough and Fall 1996, 1999).

When the inventory and entry of all available information was complete, project staff prepared an assessment of the kinds of information available, including gaps in coverage by species, geographic area, and topic. This information is presented in this final report.

RESULTS

From Neqa to Tepa: A Database with Traditional Knowledge about the Fish of Bristol Bay[1] is a product of this project. Appendix A shows what *From Neqa to Tepa* looks like to the user with some examples of how it works. It is a computer-searchable database produced using the askSam program and distributed on CDs. The database consists of TEK and other information concerning fisheries, collected by researchers at the Division and identified during this project. All notes (with some exceptions discussed below) from the following communities on the west side of Bristol Bay were put into the database: Levelock, Manokotak, Togiak, and Twin Hills. Some information from other western Bristol Bay communities, such as, Aleknagik, Clarks Point, Ekwok, Koliganek, and New Stuyahok, was also included. Information from residents of other Bristol Bay communities was identified and quantified, and geographical and topical areas were identified where more research is needed (see the Discussion section). Recommendations for future research are included (see Conclusions and Recommendation sections). *From Neqa to Tepa* was demonstrated to BBNA staff on May 7, 2001 (earlier attempts failed to organize a meeting that key people could attend). In January 2001, Version 1.0 of *From Neqa to Tepa* was distributed to BBNA (several copies) and the US Fish and Wildlife Service (30 copies). In April 2001, copies were sent to village councils in western Bristol Bay. In November 2000, a draft version of *From Neqa to Tepa* was demonstrated to Ralph Andersen, head of the Natural Resources Department at BBNA, in Anchorage. He had several ideas of how to make the database better, and almost all of his suggestions were incorporated (such as, a better map and links to Division technical papers and reports).

From Neqa to Tepa is constituted mainly from information that was on floppy computer disks, backing up the hard drives of past Division researchers. They were copied into a master directory on the ADF&G network where they are secure and constantly backed up. The typed hardcopies of many notes from the 1980s were scanned, edited, and added to the master directory. Notes typed into a Lexitron, already converted into Microsoft word in the early 1990s, were organized and disks copied to the master directory.

The master directory is overviewed in Appendix B. Appendix B shows that the main directory is organized by researcher and community and is a record of what is included in *From Neqa to Tepa*, and what is not included.

All 1,427 entries in the database are keyworded (see Table 1 for a list and descriptions of the keywords). Any word, including keywords, can be searched for. However, the specific keywords in Table 1 are placed in "Fields" which allow for faster and more specific searches. The askSam program looks for the keyword in one field only (e.g. Togiak in the Community field) rather than searching through the entire text of all 1,427 entries). Multiple fields can be

[1] **From Neqa to Tepa** (in the Yup'ik language, the generic name for "fish", neqa, to the making of "aging fish heads", tepa) combines the knowledge of harvesting wild fish, neqa, and its production into a local delicacy, tepa. The importance of both the wild fish and the knowledge of fish by the local people are connected in this phrase.

searched at the same time. Therefore, there are hundreds of thousands of possible searches that can be viewed, saved, and printed. A search in a field can be printed only by saving the results of the search to a hard drive as a text (.txt) file, a shortcoming of the program. (However, a search for any word using the sort command can be printed directly from the screen.) Division technical papers and other reports concerning western Bristol Bay are included as .pdf files and can be opened using the Adobe program. The database provides a link to the Adobe web page for a free download. A map of the entire Bristol Bay area is also available to view on the database. The database was put on a CD, and instructions on how to use the database from a computer are on the inside cover.

The final objective of this project is an assessment of the current coverage of the information by species, geographic area, and topic, and is accomplished below in the Discussion sections.

DISCUSSION

First Priority Communities

There are many individual notes from Division research about the fisheries of western Bristol Bay, specifically for Togiak, Twin Hills, Manokotak, and Aleknagik, and also for Levelock. This information is strongest in its descriptions of the non-commercial harvest and use of fish, and specifically in the trade and distribution of fish, or sharing. Also common are notes describing specific harvest sites, method of harvest, and to a lesser degree the preservation and preparation of fish. These notes are found using the "sociological keywords" (see Table 1). In general the more notes there are regarding a species, the more likely it is that there is also ecological information, such as, descriptions of fish in western and traditional taxonomies, seasonal movement, and population trends. These notes are found using "ecological keywords". In general, species with 15 notes or less (or "hits" in database lingo) for a particular community probably have one or two in-depth descriptions of the species. If a species has more than 20 hits, it is likely that there are at least general notes covering the use and harvest and probably the ecology of a species. As described below, some notes were not included in the database (Tables B-1 and B2). The reason for non-inclusion is lack of time and the desire to create a database structure for review and testing.

Some salmon notes exist for every community in the database. This is in part due to the almost universal harvest and use of salmon by residents in the Bristol Bay region. Other species that are used much less universally have fewer notes as there are fewer people with knowledge of these species, such as blackfish and burbot.

For people in Togiak and Twin Hills, smelt and Dolly Varden are the freshwater fish species most commonly used (BBNA and ADF&G 1996, Schichnes and Chythlook 1988). The bulk of these two species make up the majority (82 percent) of the freshwater fish harvest, in pounds edible weight. Coverage for these two species in the database is good with 27 hits for smelt and 69 hits for Dolly Varden (92 for the more general category trout/char). There are a total of 137

salmon notes and 262 non-salmon fish notes for Togiak and Twin Hills. There are at least 15 notes for all species of fish known to be used by these two communities, except grayling and herring, and also rainbow and lake trouts (which do not exist in large numbers in the area). Missing from the database are existing notes recorded in the late 1980s in response to fishing site conflicts on the Togiak River (Gross 1987). There are some interesting descriptions of customary rules and the treatment of fish, that are buried within testimony about the number of non-local people sport rod and reel fishing on the river in recent times. These notes need to be edited to preserve the anonymity of the respondents before being added the database. The editing has been started.

In Manokotak around half of the freshwater fish harvest is pike, in pounds edible weight (BBNA and ADF&G 1996); however, all freshwater species were used by more than 50 percent of households (except rainbow and lake trouts, which do not exist in large numbers in the area). In the database, there are 24 pike hits, and there are at least 20 hits for all species but grayling and herring. There are 27 salmon and 234 non-salmon fish notes.

Notes from the residents of Aleknagik include not only the Wood River drainage but also Kulukak Bay where some of the residents were originally from before it was abandoned as a year round village by the 1940s. There are 20 salmon notes and 15 non-salmon notes. There are some baseline survey notes from 1989 specifically about salmon that can be added after they are edited.

There are 47 salmon notes from Levelock and 74 non-salmon fish notes. Most of the non-salmon fish notes concern trout and char and whitefish in the Igushik drainage. These are the species most commonly used by the residents of Levelock (Kenner et el. 1999).

Second Priority Communities

The second priority for inclusion into the data base were notes from residents of Ekwok, Portage Creek, New Stuyahok, Koliganek, Dillingham, and Clarks Point. For the four Nushagak River communities (Ekwok, Portage Creek, New Stuyahok, and Koliganek), the majority of notes are from the years 1986 to 1987 when the baseline survey on the subsistence use and harvest of all resources was in progress (Schichnes and Chythlook 1991) as well as other research concerning freshwater fish (Fall et al. 1996). There are 39 salmon notes and 50 non-salmon fish notes. Whitefish is the most covered with other non-salmon species covered less well, under 15 notes each. Most notes concern the Nushagak River and tributaries but also there are discussions of some of the lakes in the area.

For Clarks Point residents, very little information has been added to the database. The non-salmon fish information collected during the baseline survey is included (Seitz 1990a, 1990b). There are notes about salmon that have not been included and can be after editing which has been started.

A few notes from Dillingham residents have been added to the database, the majority of which describe herring. The notes from the baseline survey in Dillingham from the mid 1980s (Fall et al. 1986) have not been added. Editing was started.

Third Priority Communities

Of the available information, very few of the existing Iliamna Lake subregion notes have been included in this first version of the database. Only Chythlook's general notes from the 1992 baseline survey of the subsistence use and harvest of all species of resources have been included. The notes from Kenner et al. 1999 (for Pedro Bay and Levelock) have not been added, nor freshwater fish research notes from the late 1980s (Fall et al. 1996, Morris 1986). Also, there are other general notes about resource use in Iliamna and Newhalen from a baseline survey in 1992, and from a baseline survey in Kokhanok and Igiugig in 1993. Finally, there are general notes about resource use by Lake Clark residents collected in the 1970s. These, too, will wait a future updating of the database.

Fourth Priority Communities

The database includes no entries from residents of western Alaska Peninsula communities, including Naknek, King Salmon, South Naknek, Egegik, Pilot Point, Ugashik, and Port Heiden. From the inventory of existing information held by the Division, very few notes were retrieved from these communities. During the time these communities were visited intensively by researchers (Morris 1982, 1985 and 1987), notes were handwritten and, at the most, type written on a typewriter. However, notes for other communities during this time were retrieved from hard files, and there may be some still for fourth priority communities. They will provide only general resource information, though, mostly through baseline survey research. Currently, US Fish and Wildlife Service supported research into these fisheries is being conducted jointly by staff at BBNA and ADF&G, Division of Subsistence. Priority four and five communities are the focus of this research.

Fifth Priority Communities

The database includes no entries for the southern Alaska Peninsula communities, including, Chignik Lake, Chignik Lagoon, Chignik Bay, Perryville, and Ivanof Bay. Information exits concerning these fisheries, especially describing the salmon runs (e.g. ADF&G 2002, Hutchinson-Scarbrough and Fall 1996, 1999) but have not been added to the database. Nor have baseline survey notes from the 1980s and 1990s been included (Fall et al. 1995, Morris 1987).

CONCLUSIONS

Traditional knowledge about the fisheries of the first priority communities is extensive, including Togiak, Twin Hills, Manokotak, and Levelock. While some subjects, such as, traditional taxonomy and seasonality, are covered more than others, the database contains many entries for these communities as a whole. There are fewer entries for Aleknagik, however, and more of the Division's past research notes need to be added, as discussed earlier (see Table B-2).

Communities along the Nushagak drainage, second priority communities, are represented fairly well in the database, especially Ekwok, New Stuyahok, and Koliganek. Currently, there is more detailed information concerning use areas and methods, especially for the species that are abundant and used the most, such as whitefish, then for other species or topics. There is less ecological information than there is for first order communities and fewer notes in total.

For the Iliamna Lake region, third priority communities, there is more information from Division files to be added to the database, than is currently in it. For example, notes were taken during a freshwater fish survey in Pedro Bay, emphasizing the Iliamna River and trout and char species (Kenner et al. 1996). There are notes about general resource use specific to the other communities (Newhalen, Iliamna, Igiugig, and Kokhanok) containing some fisheries notes, but fisheries are not extensively described.

There are no notes for fourth priority communities, the north Alaska Peninsula, in the database. Not much research has been conducted specifically on fisheries. As mentioned above, research is currently being conducted on the fisheries in this area, and the south Alaska Peninsula (fifth priority communities), by BBNA and Division staff.

There are no notes for fifth priority communities in the database. There is very little non-salmon fish information from residents of Chignik Bay, Chignik Lagoon, Chignik Lake, Perryville, and Ivanof Bay. However, there has been research concerning general resource use, including non-salmon fish. Salmon fisheries are covered more extensively, there being several years when focused research was conducted in some of these communities.

RECOMMENDATIONS

If future research of fisheries in Bristol Bay becomes possible, several priorities should be evaluated.

1. Non-salmon species should be given as much consideration as salmon. Salmon fisheries have been extensively studied by both biological and anthropological researchers in the Bristol Bay area. While only a little of this information exists in the current database, use information is widely known, taught, written about, and described through stories. The majority of people still participate in these fisheries, often in ways similar to their grandparents. Seasonality, method and means, preservation, and other topics are often alike in different communities, although

knowledge specific to each drainage can be unique and is in need of further study. The results of non-salmon fish research is more varied in different communities. People's preferences vary with the population, seasonality, and method for retrieving different species of fish. For example, icefishing is very much dependent on weather and other ecological conditions, such as the presence of a frozen lake or stream that can be accessed, conditions that may vary from community to community.

2. Communities that rely the most on fish and for which use areas are in the most conflict with other users, such as non-local sport fishers and commercial fishers, should be priorities for research. The knowledge aids managers as well as users.

3. Information from people of the northern Alaska Peninsula should be interviewed and TEK collected concerning fisheries, information that up to this point has not been systematically collected. This research has been started and is described above.

ACKNOWLEDGEMENTS

The U.S. Fish and Wildlife Service, Office of Subsistence Management, provided $39,600 in funding support for this project through the Fisheries Resource Monitoring Program, under contract number .

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Table 1. Keywords used in *From Neqa to Tepa* version 1.0

COMMUNITY	Aleknagik	Levelock
	Clarks Point	Manokotak
	Dillingham	Naknek
	Ekwok	New Stuyahok
	Igiugig	Newhalen
	Igushik	Old Stuyahok
	Iliamna	Old Togiak
	King Salmon	Osviak
	Kokhanok	Pedro Bay
	Koliganek	Togiak
	Kulukak	Twin Hills
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	Molly Chythlook	Russell Nelson
	Pippa Coiley Kenner	
CODE	000-000-000000 (000 community code 000 household number or initials of respondent 000000 monthdayyear) The "Code" is in three parts to show the community ID number, the household ID number, and the date of the interview. The community ID number is an arbitrary number assigned by our Data Management section to reference each Alaskan community. Household ID numbers constitute the middle number of the code. Household lists associating these ID numbers with family names are highly confidential and can be accessed only by Division of Subsistence staff members. Household names are not made available as public information. To protect their privacy, respondents are often referred to simply as "R". The third part of the code is the date when the information was recorded.	
YEAR	Example: 1990	
ETHNIC GROUP	Yup'ik, Athabaskan, Alutiiq, other	
RESPONDENT	expert, questionnaire note, uncategorized	
LOCATION	Togiak Bay drainage	
	Kulukak Bay drainage	
	Igushik River drainage	
	Wood River drainage	
	Nushagak River drainage	
	Nushagak Bay	
	Kvichak Bay drainage	
	Other Bristol Bay drainage	
SPECIES	**salmon AND**	**nonsalmon fish AND**
	Chinook	blackfish
	coho	burbot
	sockeye	capelin
	chum	cod
	pink	Dolly Varden
	spawnout	flounder
		grayling
		greenling
		hake
		halibut
		herring
		lake trout
		marine invertebrate
		pike
		pollock
		prowfish
		rainbow trout
		rockfish
		sculpin
		smelt/eulachon (hooligan)
		steelhead
		sucker
		trout/char
		whitefish
		wrymouth
		other

Table 1. Continued

Ecological Keywords	Expanded Meaning	Example
traditional taxonomy	Traditional taxonomy	yugyak, anerrluaq, or fish description
customary rule	Customary rule or belief	waste prohibitions, catch and release prohibition "playing with fish"
condition	Condition of fish	healthy, skinny, wormy
population	Population trend	more fish, less fish
seasonal movement	Seasonal movement	spawning areas, winter habitats, summer habitats, run timing, life cycle
ecology	Other ecology	the relationship between individuals of a species and individuals and the environment, i.e., competition for food, effects of pollution, prey species, diet, and weather
Sociological Keywords	Expanded Meaning	Example
seasonality	Timing of harvest	month or season
method and means	Harvest method and means	seine, gillnet, rod and reel, snow machine, boat
harvest level	Harvest level	more fish, less fish, 20 fish, and why
preservation and processing	Preservation/processing method	drying, freezing, splitting, and hanging, parts of fish used, division of labor
division of labor	Division of Labor	women icefishing and splitting salmon, men using fish traps
preparation	Preparation method	preparation of meals
preference	Preference	fresh or smoked, boiled or fried, differences between young and old people
distribution	Distribution	sharing between individuals and trade between communities
other use	Use other than human consumption	dog food, bait
regulation	Regulation of harvest	ADF&G regulations
user conflict	User conflict	fishing sites on Togiak River
use area	Use area	Dillingham beaches, confluence of Kokwok and Nushagak rivers
commercial use	Commercial use	commercial use
ceremony	Ceremony	Selavi
traditional story	Traditional story	A story, usually about people and animals, often describing a rule

APPENDIX A

Technical Documentation

From Neqa to Tepa

A database with traditional knowledge about the fish of Bristol Bay

Database Version 1.0, 2001
ALASKA DEPARTMENT OF FISH AND GAME, DIVISION OF SUBSISTENCE

WELCOME TO "FROM NEQA TO TEPA"

Click here to find out more about **From Neqa to Tepa**. Phrases that are **underlined** are "links" to more information. To find information about subsistence fisheries in Bristol Bay, click **Searching with Keywords**, a step by step description of how to successfully conduct a search.

Begin Search takes you to the file where the notes are kept. On the screen is the first note in the database, called a Document, where you can see the entire contents of the database by flipping through the notes. This is where you can conduct a search.

Acknowledgments **Map of Bristol Bay** **Technical Papers**

There are nine **fields**, or main categories of information, used to organize this database. Underneath the fields there are lists of **keywords**. Keywords are how you "search" in the database. **Conducting a search allows you to pick and choose what notes you want to see**. For instance, if you want to view notes about subsistence fisheries on the Togiak River only, begin your search by selecting **Begin Search,** above.

Select **Conduct a search and view the results**.
The **Search dialogue box** will appear
Choose to search in a **Field**
Pull down the **Field menu**
Select the **LOCATION** Field from the list
Enter the keyword **Togiak Bay drainage**, found on the keyword list
Choose **OK**

askSam will execute the search and open the **Search Results Window** at the bottom of the screen. The Documents retrieved by the search will be listed in the Search Results Window. The first retrieved Document will be displayed in the top portion of the screen. To view the next Document, click on it in the Search Results Window.

Click on a field below to review the **keywords** in the field:

FIELDS

Community
Researcher
Code
Year
Ethnic Group
Respondent
Location
Species
Keywords

Return to top of page

Before you proceed, go to the toolbar above, select the **File** pulldown menu, and **Print** this file. It is helpful to have a hard copy of the keyword list next to you to use when using the database.

COMMUNITY

Aleknagik
Clarks Point
Dillingham
Ekwok
Igiugig
Igushik
Iliamna
King Salmon
Kokhanok
Koliganek
Kulukak
Levelock
Manokotak
Naknek
New Stuyahok
Newhalen
Old Stuyahok
Old Togiak
Osviak
Pedro Bay
Portage Creek
Togiak
Twin Hills

HOME

RESEARCHER

Judith Morris
Robert Wolfe
Steve Behnke
John Wright
Molly Chythlook
Pippa Coiley Kenner
Jody Seitz
Janet Schichnes
Vicki Vanek
Ted Krieg
Russell Nelson

HOME

CODE

000-000-000000 (000 community code 000 household number or initials of respondent 000000 monthdayyear) The “Code” is in three parts to show the community ID number, the household ID number, and the date of the interview. The community ID number is an arbitrary number assigned by our Data Management section to reference each Alaskan community. Household ID numbers constitute the middle number of the code. Household lists associating these ID numbers with family names are highly confidential and can be accessed only by Division of Subsistence staff members. Household names are not made available as public information. To protect their privacy, respondents are often referred to simply as "R". The third part of the code is the date when the information was recorded.

YEAR

Example: 1990

ETHNIC GROUP

Yup'ik, Athabaskan, Alutiiq, other

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RESPONDENT

expert, questionnaire note, uncategorized

LOCATION

Togiak Bay drainage
Kulukak Bay drainage
Igushik River drainage
Wood River drainage
Nushagak River drainage
Nushagak Bay
Kvichak Bay drainage
Other Bristol Bay drainage

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SPECIES

salmon AND
Chinook
coho
sockeye
chum
pink
spawnout

nonsalmon fish AND
blackfish
burbot
capelin
cod
Dolly Varden
flounder
grayling
greenling
hake
halibut
herring
lake trout
marine invertebrate
pike
pollock
prowfish
rainbow trout
rockfish
sculpin
smelt/eulachon (hooligan)
steelhead
sucker
trout/char
whitefish
wrymouth
other

HOME

KEYWORDS

Ecological Keywords

traditional taxonomy
customary rule
condition
population
seasonal movement
ecology

Sociological Keywords

seasonality
method and means
harvest level
preservation and processing
preparation
preference
distribution
other use
regulation
user conflict
commercial use

Scroll down to see a more detailed explanation of the ecological and sociological keywords.

HOME

Ecological Keywords	Expanded Meaning	Example
traditional taxonomy	Traditional taxonomy	yugyak, anerrluaq, or fish description
customary rule	Customary rule or belief	waste prohibitions, catch and release prohibition "playing with fish"
condition	Condition of fish	healthy, skinny, wormy
population	Population trend	more fish, less fish
seasonal movement	Seasonal movement	spawning areas, winter habitats, summer habitats, run timing, life cycle
ecology	Other ecology	the relationship between individuals of a species and individuals and the environment, i.e., competition for food, effects of pollution, prey species, diet, and weather

HOME

Sociological Keywords	Expanded Meaning	Example
seasonality	Timing of harvest	month or season
method and means	Harvest method and means	seine, gillnet, rod and reel, snow machine, boat
harvest level	Harvest level	more fish, less fish, 20 fish, and why
preservation and processing	Preservation/processing method	drying, freezing, splitting, and hanging, parts of fish used, division of labor
division of labor	Division of Labor	women icefishing and splitting salmon, men using fish traps
preparation	Preparation method	preparation of meals
preference	Preference	fresh or smoked, boiled or fried, differences between young and old people
distribution	Distribution	sharing between individuals and trade between communities
other use	Use other than human consumption	dog food, bait

regulation	Regulation of harvest	ADF&G regulations
user conflict	User conflict	fishing sites on Togiak River
use area	Use area	Dillingham beaches, confluence of Kokwok and Nushagak rivers
commercial use	Commercial use	commercial use
ceremony	Ceremony	Selavi
traditional story	Traditional story	A story, usually about people and animals, often describing a rule

HOME

HOME

version 1.0

Welcome to **From Neqa to Tepa***, a searchable database of indigenous local knowledge about the fish of Bristol Bay ©2001 by the Alaska Department of Fish and Game. It is intended for personal and educational use only and may not be copied or distributed. Please click on the following CD icon to read the Department's full copyright notice: 

From Neqa to Tepa was compiled by the Division of Subsistence, Alaska Department of Fish and Game, from interviews with Alaska Natives in communities primarily on the west side of Bristol Bay: Togiak, Twin Hills, Manokotak, Aleknagik, Koliganek, New Stuyahok, Ekwok, Dillingham, and Clarks Point. The earliest notes were taken in 1982 when the Division of Subsistence was formed in response to a new state subsistence law. This database covers different kinds of information including traditional knowledge, field observations, and information from key respondents. Some of this knowledge is traditional and some of it is based on more recent observations. The extent of the coverage in this database reflects the research the division has done in the Bristol Bay area and is by no means comprehensive.

From Neqa to Tepa is simply a group of hundreds of notes, each less than one page long. In the **askSam Program**, each note is a Document and is like a card in a card file At the top of each note are listed nine **fields** or main categories of information. The database will search in these fields for the topics that you are interested in.

FIELDS

Community
Researcher
Code
Year
Ethnic Group
Respondent
Location
Species
Keywords

The “Community” field is filled with the name of the community the note is about. The “Researcher” field is the name of the researcher that wrote down the information. The “Code” is in three parts to show the community ID number, the household ID number, and the date of the interview. The community ID number is an arbitrary number assigned by our Data Management section to reference each Alaskan community.

Household ID numbers constitute the middle number of the code. Household lists associating these ID numbers with family names are highly confidential and can be accessed only by Division of Subsistence staff members. Household names are not made available as public information. To protect their privacy, respondents are often referred to simply as "R". The third part of the code is the date when the information was recorded.

Click here to view the list of keywords in each field. **KEYWORD**

Users of **From Neqa to Tepa** are provided with a "view-only version" of the **askSam** software, as licensed by the Alaska Department of Fish and Game from askSam Systems. For more detailed assistance in using **askSam**, consult the Help menu on the toolbar.

More information about Bristol Bay subsistence fisheries has been compiled in community harvest surveys conducted between 1983 and 2000 for the Division of Subsistence, Alaska Department of Fish and Game. Users of this database may wish to consult the Division of Subsistence technical paper series for harvest information by community.

For technical assistance, comments, or questions, or to obtain copies of technical papers and additional copies of this CD contact Pippa Coiley Kenner, Alaska Department of Fish and Game, Division of Subsistence, 333 Raspberry Road, Anchorage, Alaska 99518. Or telephone Voice: (907) 267-2353; Fax: (907) 267-2450; Pippa_Kenner@fishgame.state.ak.us

Click here to return to the **From Neqa to Tepa** home page: **HOME**

* **From Neqa to Tepa** (in the Yup'ik language, the generic name for "fish", neqa, to the making of "aging fish heads", tepa) combines the knowledge of harvesting wild fish, neqa, and its production into a local delicacy, tepa. The importance of both the wild fish and the knowledge of fish by the local people are connected in this phrase.

HOME

Searching with Keywords

You can quickly and easily conduct a search and view the results:

Select **Begin Search** from the Home page
Select Conduct a search and view the results.
The **Search dialogue box** will appear
Choose to search in a **Field**
Pull down the **Field menu**
Select one field from the list
Enter a keyword from the keyword list
Choose **OK** or you can select to search in an additional field

askSam executes the search and opens the **Search Results Window** at the bottom of the screen. The notes, or Documents, retrieved by the search are listed in the Search Results Window. The first retrieved Document is displayed in the top portion of the screen.

Choose to view any retrieved document simply by clicking on it in the Search Results Window at the bottom of the screen.

Another feature of the database is the ability to easily locate the rest of the paper from which one Document came. At the bottom of the view of the Document click the arrows to view the Documents before and after the one in the window. By paying attention to the fields, you can see all the notes in sequence associated with a certain researcher on a certain day.

To print the search results:

With the results of a search still on the main screen, return to the first Document in the database by clicking on the symbol at the bottom of the window
Select Print the results of a search that is on the screen.
The **Search dialogue box** will appear
Choose **OK**
The **Export dialogue box** will appear
Choose where you want the search results to be saved on your hard drive and name it
Select **Save**

The report has been saved as a .txt file. It can be viewed and printed from your computer hard drive.

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Acknowledgments

We are deeply indebted to the many people in Bristol Bay who contributed generously and substantially to this project. Although their identities must remain anonymous for reasons of personal privacy, we extend our thanks to every individual interviewed for sharing with us what they know about their fisheries' resources.

Funding for organizing this information into the **askSam** format was provided by the **US Fish and Wildlife Service**.

This version of **From Neqa to Tepa** was also made possible due to the support of the **Bristol Bay Native Association** as well as the Alaska Department of Fish and Game. Much of the structure of **From Neqa to Tepa** was taken from **WHISKERS!** designed by Craig Mishler and Charles Utermohle of the Division of Subsistence, Alaska Department of Fish and Game. **From Neqa to Tepa** was created by Pippa Coiley Kenner at the Division of Subsistence, Alaska Department of Fish and Game.

The following individuals collected and processed the notes which are included in **From Neqa to Tepa**. They are all current or former staff members with the Alaska Department of Fish & Game, Division of Subsistence, and without their diligent efforts over the years this database would not have been possible: Molly Chythlook, Janet Schichnes, Robert Wolfe, Judith Morris, Steve Behnke, John Wright, Pippa Coiley Kenner, Jody Seitz, and Vicki Vanek. Ted Krieg and Russell Nelson of the Bristol Bay Native Association also helped collect this information. James Fall tested the file system providing many useful comments that helped to shape and structure the information. Brian Davis made the map of Bristol Bay.

Click here to return to the **From Neqa to Tepa** home page: HOME

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Alaska Department of Fish and Game

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Technical Papers

These reports are Adobe Acrobat PDF files and require a free viewer available directly from Adobe.

Patterns of Wild Resource Use in Dillingham: Hunting and Fishing in an Alaskan Regional Center. Technical Paper No. 135. Fall, James A., Janet Schichnes, Molly Chythlook, and Robert J. Walker. 1986.

An Overview of the Harvest and Use of Freshwater Fish by Communities of the Bristol Bay Region, Southwest Alaska. Technical Paper No. 166. Fall, James A., Molly B. Chythlook, Janet E. Schichnes, and Judith M. Morris. 1996.

Subsistence Fishing Patterns on the Togiak River and the Impact of Sport Fishing. Technical Paper No. 203. Gross, Joseph. 1987 (1991 Revised).

There is a map with salmon and char fishing sites on the Togiak River (p. 25), and a map with Yup'ik place names on the Togiak River (p. 176) in this report.

The Harvest and Use of Freshwater Fish in Togiak and Manokotak, 1994-95. Natural Resource Department, Bristol Bay Native Association, Dillingham; and Division of Subsistence, Alaska Department of Fish and Game, Juneau. 1996.

Wild Resource Uses in Manokotak, Southwest Alaska. Technical Paper No. 152. Schichnes, Janet C. and Molly B. Chythlook. 1988.

Contemporary Use of Fish and Wildlife in Ekwok, Koliganek, and New Stuyahok, Alaska. Technical Paper No. 185. Schichnes, Janet and Molly Chythlook. 1991.

Subsistence Uses in Clark's Point. Technical Paper No. 186. Seitz, Jody. 1990.

Subsistence Fishing in the Nushagak Bay, Southwest Alaska. Technical Paper No. 195. Seitz, Jody. 1990.

Subsistence-Based Economies in Coastal Communities of Southwest Alaska. Technical Paper No. 89. Wolfe, Robert J., Joseph J. Gross, Steven J. Langdon, John M. Wright, George K. Sherrod, Linda J. Ellanna, Valerie Sumida, and Peter J. Usher. 1984.

The Role of Fish and Wildlife in the Economies of Barrow, Bethel, Dillingham, Kotzebue, and Nome. Technical Paper No. 154. Wolfe, Robert J., James A. Fall, Virginia Fay, Susan Georgette, James S. Magdanz, Sverre Pedersen, Mary C. Pete, and Janet Schichnes (contributors). 1986.

Bristol Bay Regional Subsistence Profile. Technical Paper No. 114. Wright, John M., Judith Morris, and Robert Schroeder. 1985.

Subsistence Harvests of Herring Spawn on Kelp in the Togiak District of Bristol Bay. Technical Paper No. 116. Wright, John M. and Molly Chythlook. 1985.

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HOME

Back to instructions Searching with Keywords

Conduct a search and view the results.

Print the results of a search that is on the screen.

This is the first document in the Bristol Bay subsistence fisheries database. There are 1,426 more to search.

COMMUNITY[Levelock]
RESEARCHER[Molly Chythlook]
CODE[211-000-052097]
YEAR[1997]
ETHNIC GROUP[Yup'ik]
RESPONDENT[uncategorized]
LOCATION[Kvichak Bay drainage]
SPECIES[]
KEYWORDS[]
NOTES[The weather was rainy when I left Dillingham, but Levelock was overcast and winds calm. The river ice had gone out early this spring and the river was free of ice for traveling with the exception of the low water level in the earlier part of the season.]

CONDUCTING A SEARCH WITH *FROM NEQA TO TEPA*

1. Select **Begin Search** from the top of the home page. The next screen is the one shown below.
2. Select **Conduct a search and view the results**. The Search dialogue box appears.
3. Choose fields and keywords that you want to view. In this example, Levelock was chosen from the Community field, Molly Chythlook from the Researcher field, and nonsalmon fish from the Species field.
4. Select **OK** from the Search dialogue box.

HOME

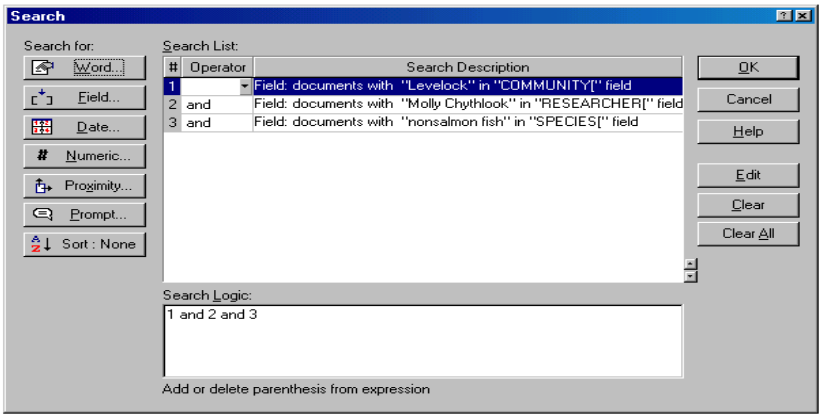
Back to instructions Searching with Keywords

Conduct a search and view the results.

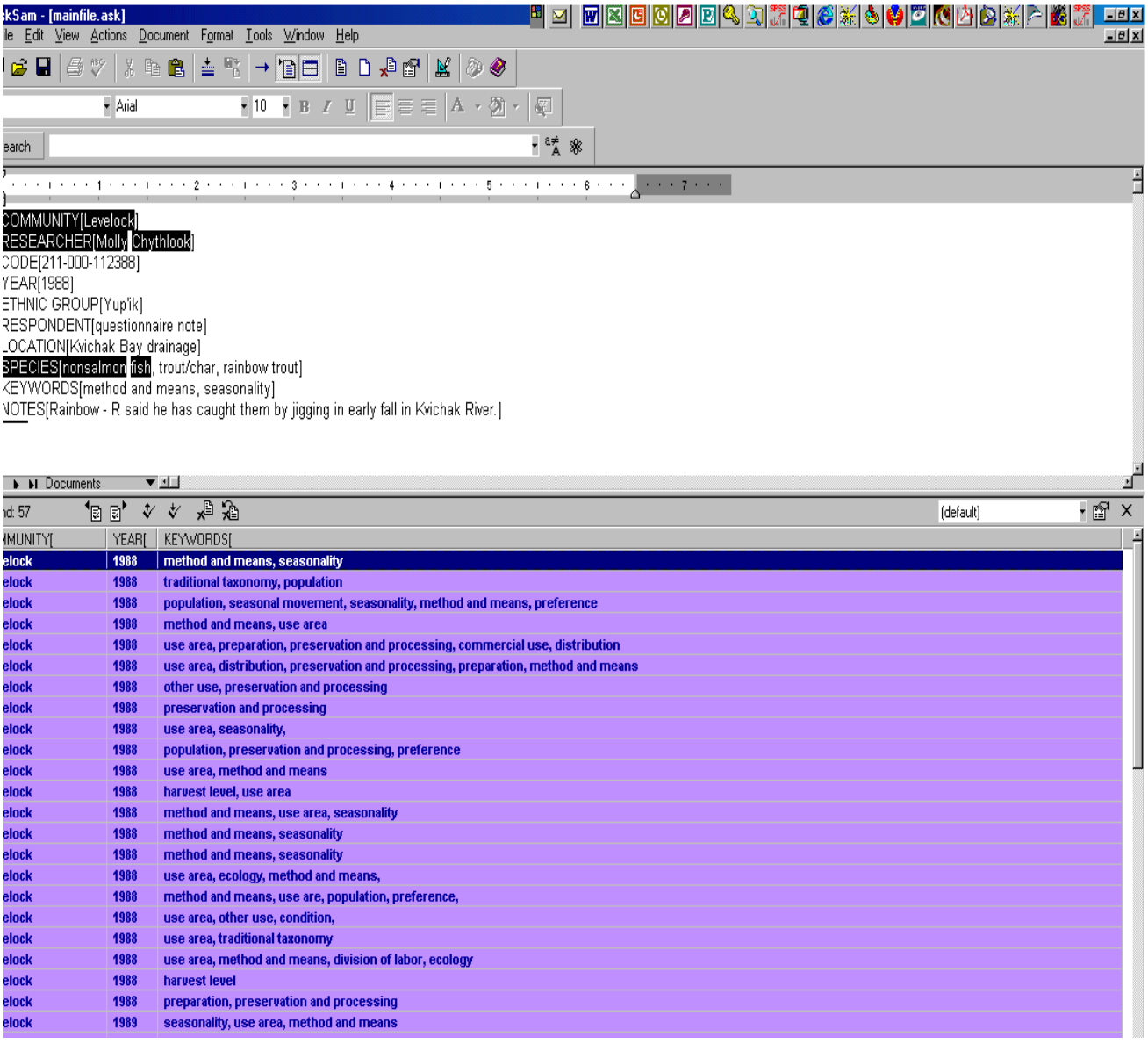
Print the results of a search that is on the screen.

This is the first document in the Bristol Bay subsistence fisheries database. There are 1,426 more to search.

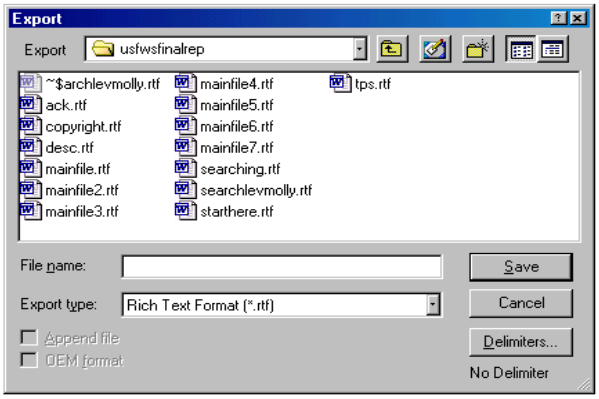
COMMUNITY[Levelock]
RESEARCHER[Molly Chythlook]
CODE[211-000-052097]
YEAR[1997]
ETHNIC GROUP[Yup'ik]
RESPONDENT[uncategorized]
LOCATION[Kvichak Bay drainage]
SPECIES[]
KEYWORDS[]
NOTES[The weather was rainy when I left Dillingham, but Levelock was overcast and winds calm. The river ice had gone out early this spring and the river was free of ice for traveling with the exception of the low water level in the earlier part of the season.]



5. The Search Results window, shown in purple below, appears. This window lists the notes, or documents in askSam lingo, retrieved by the search. The first retrieved note is displayed in the top portion of the screen.
6. Choose to view any document found by the search simply by clicking on it in the Search Results window, and it will replace the note at the top of the screen.



7. To print the search results, return to the first document in the database by clinking on the left arrow at the bottom of the note in the upper screen.
8. Select **Print the results of a search that is on the screen**. The Search dialogue box will appear again.
9. Select **OK** from the Search Dialogue box.
10. The Export dialogue box with appear. Choose where you want the search results to be saved on your hard drive and name it.
11. Select **Save**. The report has been saved as a .txt file. It can be viewed and printed from your computer hard drive.
12. To put an empty line between each not, select **Delimiters** from the Export dialogue box.



RESULTS OF THE SEARCH

Below are the first few notes from the example search conducted above, saved as a .txt file.

COMMUNITY[Levelock]
RESEARCHER[Molly Chythlook]
CODE[211-000-052097]
YEAR[1997]
ETHNIC GROUP[Yup'ik]
RESPONDENT[uncategorized]
LOCATION[Kvichak Bay drainage]
SPECIES[nonsalmon fish, whitefish, pike]
KEYWORDS[seasonality, use area]
NOTES[The households with children attending the local school were busy preparing for their year-end school picnic, and older residents were restless to leave for their subsistence spring/summer camps to harvest whitefish, pike and whatever freshwater fish they incidentally harvest while targeting whitefish and pike. Three elder households were getting ready to leave for their spring camps located at Branch River when I arrived, and I was able to survey the hhs before they left.]

COMMUNITY[Levelock]
RESEARCHER[Molly Chythlook]
CODE[211-000-052097]
YEAR[1997]
ETHNIC GROUP[Yup'ik]
RESPONDENT[uncategorized]
LOCATION[Kvichak Bay drainage]
SPECIES[salmon, nonsalmon fish]
KEYWORDS[preference, preservation and processing]
NOTES[Most of the younger households preferred eating salmon over freshwater fish and some will harvest the freshwater fish only when hunting for and helping elders pick and process their fish.]

COMMUNITY[Levelock]
RESEARCHER[Molly Chythlook]
CODE[211-000-052097]
YEAR[1997]
ETHNIC GROUP[Yup'ik]
RESPONDENT[uncategorized]
LOCATION[Kvichak Bay drainage]
SPECIES[nonsalmon fish, whitefish, pike]
KEYWORDS[seasonality, preservation and processing]
NOTES[The whitefish and pike are targeted during spring to harvest and dry for use during summer commercial salmon season and at subsistence summer camps. The dried whitefish and pike need not be smoked to cure and when dried properly will keep without refrigeration.]

COMMUNITY[Levelock]
RESEARCHER[Molly Chythlook]
CODE[211-000-052097]
YEAR[1997]
ETHNIC GROUP[Yup'ik]
RESPONDENT[uncategorized]
LOCATION[Kvichak Bay drainage]
SPECIES[nonsalmon fish, whitefish, pike, whale]
KEYWORDS[seasonality, harvest level, ecology, preservation and processing, preparation]

NOTES[The early spring (March) harvests of whitefish and pike were abnormal this year due to early rotting ice conditions and possibly low water level. The early spring whitefish harvests were hung whole after entrails were removed to age, than placed in freezer and eaten raw and or boiled. The pike were processed and hung to dry for dried fish and/or frozen whole to be eaten with rendered beluga oil and or cooked.]

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RESEARCHER[Molly Chythlook]
CODE[211-000-052097]
YEAR[1997]
ETHNIC GROUP[Yup'ik]
RESPONDENT[uncategorized]
LOCATION[Kvichak Bay drainage]
SPECIES[nonsalmon fish, grayling, whitefish, pike]
KEYWORDS[seasonality]
NOTES[The grayling historically were harvested both during spring and fall, but some now will be incidentally harvested when harvesting whitefish and pike, especially during spring season.]

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CODE[211-000-052097]
YEAR[1997]
ETHNIC GROUP[Yup'ik]
RESPONDENT[uncategorized]
LOCATION[Kvichak Bay drainage]
SPECIES[nonsalmon fish]
KEYWORDS[population, harvest level, ecology, preparation, method and means]
NOTES[It takes more effort to harvest freshwater fish now than historically due to depletion of the species. The harvesters use to make less trips to harvest the amounts desired per season and the year round freshwater fish species were harvested as needed to be eaten fresh and not fresh frozen. The majority of freshwater fish in the Kvichak and Branch rivers are mainly incidentally harvested and not targeted when "fishing for whatever fish may bite the line and or get caught in the net".]

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RESEARCHER[Molly Chythlook]
CODE[211-000-052097]
YEAR[1997]
ETHNIC GROUP[Yup'ik]
RESPONDENT[uncategorized]
LOCATION[Kvichak Bay drainage]
SPECIES[nonsalmon fish, trout/char, rainbow trout, grayling]
KEYWORDS[preference, preservation and processing, preparation, harvest level, population, use conflict, method and means, condition]
NOTES[Rainbow and grayling were targeted subsistence fish for drying, aging, cooking and to eat fresh frozen, but the fish are not as available and sufficient for desired harvest amount. The higher percent of harvest and harvesters present in the rivers during the summer and higher mortality of the fish resulting from catch and release by sport fishermen may be some reasons for the depleted state of the freshwater fish. The local harvesters are seeing dead freshwater fish in river bottoms, drifted onto sand bars, snagged dead on rocks and incidentally harvested in salmon nets with injured mouths. The local people were concerned that if 500 plus fishermen per week were harvesting freshwater fish and releasing injured fish, the impact of freshwater fish harvest and mortality rate has to be extensive in both the rivers.]

Appendix Table B-1. Notes that are included in *From Neqa to Tepa* version 1.0.

Researcher	Community	Year	Description of Notes
Located in folder *I:/…finaldatabaseimports/[researcher]/[comm]*			
Molly Chythlook	Aleknagik	1999	General
	Levelock	1988-89	Freshwater fish research and baseline survey
		1993	Katmai baseline survey notes
		1995	Marine mammal research (including beluga)
		1997	Freshwater fish research and survey comments
	Manokotak	1986-87	Baseline survey notes and collecting subsistence permits
		2001	Marine mammal research
	Ekwok, Koliganek, and New Stuyahok	1982-91	Baseline survey notes and collecting subsistence permits
	Dillingham	1985	Baseline survey notes
	Iliamna and Newhalen	1992	Baseline survey and Bristol Bay Profile notes
	Togiak and Kulukak	1982	Key informant interviews with former Kulukak residents living in Aleknagik and Togiak
			Bristol Bay Profile and misc. notes
		1985	Collecting subsistence permits and taking photographs
		1986	Herring fishing and processing notes (participant observation)
		1991-92	Interview notes associated with Togiak River conflicts
Pippa Coiley Kenner	Togiak and Manokotak	1995	Freshwater fish survey notes and comments
Ted Krieg	Togiak and Manokotak	1995	Freshwater fish survey notes and comments
Judith Morris	Levelock	1987	Freshwater fish research
Janet Schichnes	Clarks Point	1988	New subsistence salmon regulation notes
	Koliganek, Manokotak, New Stuyahok, Togiak	1985-92	Freshwater fish research
	Manokotak	1986	Baseline survey notes
	Igushik	1986-91	Baseline research notes and later notes, Kulukak herring - participant observation
	Salmon	1987	General salmon notes for Nushagak and Wood Rivers, Togiak, and Twin Hills

	Togiak	1986-88	Interview notes about Togiak River conflicts, and one beluga note
		1990-91	Togiak River project, subsistence salmon notes
	Twin Hills	1987	Subsistence permits and presenting Togiak River project
Jody Seitz	Aleknagik and Clarks Point	1989-90	Baseline suvey notes for freshwater fish